

We claim:

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## Claims

1. A system for controlling communications with a communication unit comprising:
- 5 a communication server, in communication with the communication unit, comprising a data transfer manager operable for communicating data between the communication unit and a host server, the data transfer manager comprising a
- 10 rate governor for estimating a transmission value for data communicated between the communication server and communication unit, and comparing the estimated transmission value with an allocated transmission value.
- 15 2. The system of claim 1, wherein the rate governor is further operable for preventing communication of further data between the communication server and communication unit when the estimated transmission value exceeds the allocated transmission value.
- 20 3. The system of claim 1, wherein the communication server is in communication with the communication unit via at least a first communication channel, the first communication channel including a charge-bearing channel portion of a first
- 25 communication service provider different from a second service provider of the communication server, the allocated transmission value corresponding to a total remaining transmission value authorized for the communication unit; and the rate governor is further operable for alerting the
- 30 communication unit when the allocated transmission value becomes less than a first threshold.

4. The system of claim 1, wherein the data transfer manager further comprises a client profile store for storing the allocated transmission value, and the rate governor is  
5 further operable for updating the allocated transmission value, in response to a first data unit having an estimated first transmission value, by subtracting the estimated first transmission value from the allocated transmission value to obtain an updated allocated transmission value, and replacing  
10 the allocated transmission value in the client profile store with the updated allocated transmission value.

5. The system of claim 1, wherein the data transfer manager further comprises a client profile store for storing  
15 the allocated transmission value, the data comprises plural data units and the estimated transmission value comprises an estimated total transmission value for the plural data units, and the rate governor is further operable for updating the allocated transmission value, in response to a further data unit  
20 having an estimated further transmission value, by adding the further estimated transmission value and estimated total transmission value to form an updated estimated total transmission value, and determining if the updated estimated total transmission value is greater than the allocated  
25 transmission value.

6. The system of claim 5, wherein the rate governor is further operable to determine whether the communication unit is privileged and if so, permitting communication with the  
30 communication unit to continue.

7. The system of claim 5, wherein the rate governor is further operable to prevent further communication with the communication unit if the updated estimated total  
5 transmission value is greater than the allocated transmission value.

8. The system of claim 5, further comprising an administrator host server in communication with the  
10 communication server, wherein the rate governor is further operable to alert the administrator host server when the updated estimated total transmission value is greater than the allocated transmission value, and if the communication unit is not privileged, prohibit further communication with the  
15 communication unit except to predetermined addressees.

9. The system of claim 1, further comprising a host server in communication with the communication server, wherein the data transfer manager further comprises a virtual session  
20 manager adapted to control communication of data between the communication unit and host server by communicating the data via a sessionless-oriented communication protocol over a first communication channel between the virtual session manager and the communication unit, and by communicating the data via  
25 a session-oriented communication protocol between the virtual session manager and the host server.

10. A method of controlling communications with a communication unit comprising:

5 at a communication server in communication with the communication unit via a first communication channel:

(a) receiving a first data unit, the first data unit being communicated between the communication unit and a further communication unit; and

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(b) estimating a transmission value for the first data unit, and comparing the estimated transmission value with a transmission limit to determine whether to allow communication of further data units between the communication unit and the communication server.

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11. The method of claim 10, wherein:

20 step (b) further comprises sending a notifier message to the communication unit when the transmission limit is less than a predetermined threshold value.

12. The method of claim 10, wherein:

25 step (b) further comprises preventing communication of further data units via the communication server when the estimated transmission value exceeds the transmission limit.

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13. The method of claim 12, wherein the transmission limit comprises the difference between an allocated transmission value and at least a first preceding estimated transmission value for at least a first preceding data unit, the method further comprising:

(c) setting the transmission limit to the allocated transmission value upon the occurrence of a predetermined event.

14. The method of claim 12, wherein the transmission limit comprises the difference between an allocated transmission value and at least a first preceding estimated transmission value for at least a first preceding data unit, and:

step (b) further comprises sending a notifier message to the communication unit when estimated transmission value exceeds the transmission limit; and

(c) sending a request for an additional allocated transmission value from the communication unit to the communication server.

15. The method of claim 14, wherein:

5 step (b) further comprises also sending the notifier message to the administrator host;

(d) forwarding the request to the administrator host from the communication server; and

10 (e) determining by the administrator host to authorize the additional allocated transmission value and sending a response message to the communication server indicating the authorization of the additional allocated transmission value.

15 16. The method of claim 10, wherein:

20 step (b) further comprises determining an estimated total transmission value from the estimated transmission value and prior estimated transmission values for prior data units communicated between the communication unit and communication server, and sending a notifier message to the communication unit when the estimated total transmission value exceeds a predetermined threshold.

25 17. The method of claim 10, wherein:

30 step (b) further comprises determining an estimated total transmission value from the estimated transmission value and prior estimated transmission values for prior data units communicated between the communication unit and communication server, and preventing communication of further data units via the communication server when the estimated total transmission value exceeds the transmission limit.

18. The method of claim 17, further comprising:

5 (c) changing the estimated total transmission value to a null value upon the occurrence of a predetermined event.

19. The method of claim 17, wherein:

10 step (b) further comprises determining an estimated total transmission value from the estimated transmission value and prior estimated transmission values for prior data units communicated with the communication unit, alerting an administrator host when the estimated total transmission value is greater than the transmission limit, and, when the  
15 communication unit is not privileged, preventing the communication of further data units with the communication unit except those passing a predetermined filter criteria.

20. The method of claim 19, wherein:

20 step (b) further comprises also sending the notifier message to the communication unit;

25 (c) sending a request for an increased transmission limit from the communication unit to the communication server;

(d) forwarding the request to the administrator host from the communication server; and

30 (e) determining by the administrator host to authorize the increased transmission limit and sending a response message to the communication server indicating authorization for the increased transmission limit.



21. A communication server comprising a data transfer manager operable for communicating data with the communication unit, the data transfer manager comprising a rate governor for estimating a transmission value for data communicated between communication unit and a further communication unit, and comparing the estimated transmission value with a transmission limit to determine whether to permit further communications with the communication unit via the communication server.

22. The communication server of claim 21, wherein the rate governor is further operable for preventing communication of further data between the communication server and communication unit when the estimated transmission value exceeds the transmission limit.

23. The communication server of claim 21, wherein the rate governor is further operable for determining an estimated total transmission value from the estimated transmission value and prior estimated transmission values for prior data communicated between the communication unit and communication server, and preventing communication of further data units via the communication server when the estimated total transmission value exceeds the transmission limit.

24. The communication server of claim 21, wherein the rate governor is further operable for determining an estimated total transmission value from the estimated transmission value and prior estimated transmission values for prior data communicated between the communication unit and communication server, and sending a notifier message to the communication unit when the estimated total transmission value exceeds a predetermined threshold.

25. The communication server of claim 21, wherein the data transfer manager further comprises a virtual session manager adapted to control communication of data between the
- 5 communication unit and a host server by communicating the data via a sessionless-oriented communication protocol over a first communication channel between the virtual session manager and the communication unit, and by communicating the
- 10 data via a session-oriented communication protocol between the virtual session manager and the host server.

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